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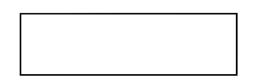
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EFFECTS OF INTERDICTION OF HAIPHONG HARBOR

ORR Project S-1191

23 March 1964

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EFFECTS OF INTERDICTION OF HAIPHONG HARBOR

Summary

Seaborne trade through the port of Haiphong in 1963 consisted of imports of about 1,400 tons per day and exports of about 2,700 tons per day. In 1963, a total of 364 vessels called at Haiphong, of which 209 were Free World, 57 were Soviet, 50 were European Satellite, and 48 were Chinese. About 130 of the Free World calls involved vessels chartered by Communist countries. Blocking of the Canal Maritime would prevent oceangoing vessels from entering the port of Haiphong; however, after some delay most of the normal imports, except large pieces of equipment and petroleum in bulk, could be off-loaded into small craft downstream and brought into the port. An in-shore and off-shore blockade of Haiphong probably would be essential to stop traffic completely.

If denied use of Haiphong harbor, nearly all seaborne imports through Taiphong could be diverted to Fort Bayard, China, and transported to North Vistnam by rail via P'ing-ha'ang. If this rail line were also interrupted over a sustained period, the country would be deprived of most of its imports. Denial of imports would result, after two months, in a drastic fall in the output on modern industry and would bring the industrial construction program to a halt. However, the country is basically self-sufficient in food, and the denial of imports would not bring about a collapse of the economy.

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for allies of the	US, most gove	rnment and p	ublic reacti	on in the Free	World
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I. Economic Significance of Foreign Trade

Foreign trade is crucial to the industrial development of North Vietnam and is equal in value to about 15 percent of gross national product (GNP). The regime recognizes the continuing dependence of the economy on imports of capital equipment and machinery as well as a wide variety of industrial materials. The value of foreign trade in 1963 was US \$241 million, an increase of 4.3 percent over 1962. (For direction and composition of foreign trade, see Appendix, Tables 1-3). About 85 percent of North Vietnam's foreign trade is with other Communist countries, Communist China and the USSR together accounting for approximately two-thirds of the value of total trade.

Nearly 60 percent of North Vietnam's exports are made up of products from agriculture, forestry, fishing, and handicrafts; about 30 percent are minerals, principally coal and apatite; and the remainder consists mostly of cement and light industrial products. The country imports all of its petroleum products, steel, railroad rolling stock and vehicles, and most of its complex machinery and metal manufactures, spare parts, industrial chemicals, and raw cotton. Priority has been given to imports of complete plant installations, machinery and equipment, and industrial raw materials. Machinery and equipment have accounted for about one-half of North Vietnam's imports in recent years. Imports of food have generally been small, but the poor agricultural performance in 1963 and fragmentary data on food purchases abroad by Hanoi suggest that food imports increased in 1963 and early 1964.

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II. Seaborne Trade Through Port of Haiphong

A. Haiphong Harbor

1. Physical Facilities

Haiphong is situated on the southern bank of the Lua Cam about 10 miles upstream from the Gulf of Tonkin. The harbor consists of a 3-mile section of the Lua Cam fronting the city, and I besin and 2 small waterways in the city. The principal wherves extend about 4,000 linear feet, virtually all of which are suitable for transferring general cargo. During 1963 one pier was rebuilt and extended about 100 feet. There are some off-shore wherver of open concrete or steel piling and a few T-head piers of the same construction. Six Liberty-size vessels can be accompated at the docks simultaneously and it is reported that as many as 6 ships can also be loaded or unloaded with lighters while anchored in the stream.

Cargo for the most part is loaded and unloaded using ships' gear, although one floating crame of approximately 50 tons is reported to be in the commercial dock area. Harbor operations are said to be inefficient, and clearance of the cargo from the dockside is slow, although some improvement has occurred in recent years. Some fork lift trucks and a few dock crames are now used on the docks to move bulky or heavy items, but most cargo handling in the port area is by truck and dollies. Ore is loaded by a few old dock crames with grab buckets. In addition, several conveyor belts were built during 1963 to load ore. Harbor clearance takes place by rail, road, and barge.

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Petroleum tankers dock at the Shell Petroleum Pier which has at least two pipelines to carry the petroleum to the three storage areas. These storage areas have tanks installed with a total capacity estimated to be about 30,000 tons.* A second petroleum pier, the Standard-Vacuum Pier, probably is not used currently.

In 1960 Haiphong harbor had ample harbor craft for normal operations, including 10 or more 100-ton wooden lighters and 30 or more 200-ton steel lighters. In addition, a large portion of the river and oceangoing craft in North Vietnam can be expected to be in or near Haiphong. A complete craft census for North Vietnam is not available, but in 1959 the government owned at least 16 oceangoing barges, 53 river-type barges (8 known to be self-propelled), one transport tanker of 300 GRT, 5 oceangoing tugs, and 14 river-type tugs, as well as other tugs and various miscellaneous craft. About 500 junks with capacities of up to 50 tons each are also available at Haiphong and can be used for lighterage purposes.

The inventory of small vessels and barges has increased since 1960, because of a heavy emphasis by the North Vietnamese government on the expansion of water transport. The government announced the construction in 1963 of 15,000 tons of barges and ships and the repair of 7,000 tons of river craft. Haipborg has at least 7 shippards, and another under construction with the help of Soviet technicians, for assembling and repairing small vessels. The new shippard is reported to have produced 200-ton and 1,000-ton lighters and tugboats in 1962.

^{*} Tonnages are given in metric tons throughout this report unless otherwise indicated.

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2. Port Capacity

The capacity of the port of Haiphong is estimated to be about 4,000 tons per day (or nearly 1.5 million tons per year) of general cargo, cement, and dry raw materials, and 800 tons per day (or nearly 300,000 tons per year) of petroleum in bulk. The volume of dry cargo passing through the port in 1963 approached the capacity level. Petroleum imports amounted to about one-half of the capacity of the petroleum pier. The total imports through Haiphong in 1963 were about 1,400 tons per day and exports about 2,700 tons per day. In the last half of 1963 the port was said to be continually congested.

| at one time in August 1963 as many as ten ships were being held outside Haiphong harbor waiting for dock space. The work of reconstructing one pier in Haiphong may have contributed to this congestion. During 1962 the Soviet Union agreed to help expand port facilities at Haiphong and the construction underway in 1963 was probably part of this agreement.

B. Shipping Activity in the Port of Haiphong, 1963

Except for the export of coal from the ports of Hon Gay and Cam Pha, the seaborne trade of North Vietnam moves almost exclusively through the port of Haiphong. An analysis of calls by merchant vessels to Haiphong in 1963 reveals that 209 of a total of 364 calls were made by vessels flying Free World flags. The UK, Japan, the Netherlands, and Horway were most frequently represented. Communist vessels that called in Maiphong were predominantly Soviet, Chinese, and Polish. (For a detailed breakdown of ship calls at Haiphong in 1963 by flag, see Appendix, Table 4). A minimum of 129 of the 209 calls by Free World vessels involved vessels chartered by communist countries (see Appendix, Table 5). In 80 percent of the cases the charterer was either North Vietnam or Communist China.

Most of the Free World vessels were freighters in tramp operation, ranging in size from 1,400 to 12,500 GRT, and averaging 4,500 GRT. The Soviet vessels were tankers and dry cargo vessels in tramp operation; they ranged in size from 1,000 to 12,000 GRT and averaged 7,300 GRT. A number of the dry cargo vessels were involved in a shuttle service between North Vietnam and North Korea, indicating they might have been under charter to North Vietnam. Satellite vessels calling at Haiphong ranged from 5,000 to 10,000 GRT, with an average of 7,000 GRT. These included Polish cargo liners which often unloaded only small amounts of cargo. The 50 Chinese vessels which called at Haiphong were primarily small—and medium-sized dry cargo vessels ranging from 1,000 to 5,000 GRT and averaging 3,000 GRT. North Vietnamese vessels operating in and out of Haiphong were mostly small coastal craft on which there is little or no reporting.

It is possible in many cases to identify cargoes moving in and out of Haiphong, but quantitate data are incomplete. It is estimated that if all of the vessels which called at Haiphong in 1963 had been loaded to capacity, they could have carried imports aggregating 2.6 million tons. However, only half of this capacity has been accounted for by reported cargo and arrivals in ballast.* The remaining capacity represents unreported cargo, unreported arrivals in ballast, space on partially loaded vessels, and space used by through cargoes. (See Appendix, Table 6).

Cargoes delivered by Free World Wessels in 1963 included maize from
Africa, Thailand, Cambodia and Communist China; a wariety of cargoes from
Japan, including foodstuffs, textiles, and ammonium sulfate; timber from
Cambodia; and POL from Rumania. Outbound Free World vessels often carried
apatite or cement. Soviet vessels delivered POL from USSR ports on the
Black Sea, ammonium sulfate from North Korea, and general cargo from various
Soviet ports. Outbound Soviet vessels often carried apatite for North Korea.
Cargoes discharged by Satellite vessels consisted largely of consumer goods,
vehicles, and spare parts, and much of this material was of Polish origin.
However, some Polish cargo liners discharged cargoes loaded at ports in France,
Japan, and Communist China. Cargoes discharged by most of the Communist
Chinese vessels had been loaded in Whampoa; the majority of these cargoes
was of Chinese origin but they included some transshipped cargo of other
origins that had been off-loaded in Whampoa. The cargoes that arrived in

^{*} Many of the vessels that arrived in ballast loaded apatite or cement for export.

lce	, maize,	ammonium	sulfate,	machiner

Chinese vessels included rice, maize, ammonium sulfate, machinery and equipment, consumer goods, and pyrites. Outbound Chinese vessels usually carried coal or cement, and other Chinese vessels arrived in ballast to load these commodities.

Table 7, the Appendix, indicates the monthly distribution of ship calls at Haiphong throughout the year.

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III. Vulnerability of the Port of Haiphong

A. Vulnerability to Blockage

The entrance to Haiphong harbor is gained from the Gulf of Tonkin through the lower reach of the Cua Nam Trieu and the Canal Maritime. The Canal Maritime is about 3,900 feet long and between 450 and 700 feet wide. The harbor fairway is dredged to a minimum of 26 feet (at low water). The depth of the Canal Maritime at its northwestern end is shown on a hydrographic chart to be 23 feet, but this area has probably also been deepened to 26 feet by dredging. If the Canal Maritime could be effectively blocked, the harbor at Haiphong would be closed to oceangoing ships, because there would be no alternative routes to the port for vessels with drafts of more than 11 feet.* Blocking the Canal Maritime would also cause silt to accumulate in the harbor area at a faster rate than usual, and would, therefore, further complicate the rehabilitation of the port.

The Cua Cam empties into the Gulf of Tonkin south of the Canal Maritime, but is so shallow that oceangoing ships could not use it to gain access to Haiphong. There is a passage from the Cua Cam north of the Canal Maritime which then empties into the Cua Nam Trieu and the Gulf of Tonkin,

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but this passage, although deeper than the southern arm of the Cua Cam, is also too shallow to permit oceangoing ships to travel through it. To deepen either of these branches of the Cua Cam to accommodate oceangoing vessels of the type currently serving the port would require dredging for a distance of at least 4 miles. This effort would require at least a year

under the most favorable circumstances and using the most modern dredging

Although the normal operation of the port of Haiphong is chiefly dependent on the availability of the Canal Maritime, blocking the Canal Maritime will not halt all traffic in and out of Haiphong. Small coastal vessels, lighters, barges, and junks that draw less than II feet could pass through the silted river channels at high water. Consequently the only way that all traffic to and from Haiphong could be halted appears to be through the imposition of an effective in-shore as well as an off-shore naval blockade.

B. Vulnerability of Dredges

equipment.

The harbor of Haiphong must be dredged continually to keep it open to occangoing ships. If dredging operations were not maintained, silt would begin to accumulate immediately, and it is estimated that the harbor would be completely blocked to oceangoing ships within 6 months. Estimates as to the number of dredges available vary from three stationed in the Haiphong harbor to eight available in the entire country of North Vietnam. Of the three said to be in Haiphong harbor, two were reported to be clam-bucket type dredges and one a suction-type with a rated capacity of 950 cubic yards

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an hour. Denial of the suction-type dredge would impair dredging operations to a much greater extent than denial of the two less modern types. If the bulk of the dredges in North Vietnam were put out of operation, it would be necessary for North Vietnam to borrow or purchase new dredges from abroad. The acquisition of additional dredges would take a considerable amount of time, possibly several months; to train personnel to operate the new dredges would require an additional period of time. In the meantime the harbor would begin to silt up.

C. Vulnerability of Port Facilities

hampered by the damage or destruction of port facilities. With the possible exception of the petroleum pier, damage done to piers could be repaired fairly quickly, and during the rehibilitation vessels could be anchored in the streams and cargo could be unloaded through the use of lighters and junks. The area around the petroleum pier must be dredged before the arrival of each tanker at the pier. Destruction of the dredges, therefore, would also interrupt the bulk supply of petroleum to Haiphong, because arriving tankers could not unload supplies at the petroleum pier. Petroleum shipped in drums, however, could still be lightered at very high cost.

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IV. Alternate Transport Facilities

A. Shipping

Although it is highly unlikely that all small craft, barges, and lighters could be prevented from moving between the Gulf of Tonkin and the port of Haiphong, it can be assumed that for a short period of time there would be drastic reduction in the volume of traffic. Oceangoing vessels would have to anchor about 10 miles downstream from the port and off-load in a lighterage operation. Only a small percent of the normal trade would be hauled that distance on the fleet of shallow-draft vessels presently available at Haiphong. This type of operation would be very inefficient and costly. The initial confusion and problems of organizing this fleet of vessels and acquiring additional vessels from other ports in North Vietnam and China would preclude any significant amount of trade being handled in the first few weeks after a blockade of the channel. It is conceivable, however, that eventually these craft could handle all of the imports except the largest pieces of heavy equipment and the petroleum in bulk. Some exports could be handled in this manner although with considerable loss of efficiency. However, since most of the exports are bulk commodities, which are difficult to handle by small craft, it is likely that they would be shipped via other ports in North Vietnam and China insofar as possible.

North Vietnam has only two secondary ports, Cam Pha and Hon Gay, that can accommodate occangoing vessels of over 5,000 GRT. These two ports are located just northeast of Haiphong and are especially equipped to export coal, but also have very limited facilities for handling other types of cargo. Besides the coal piers and their mechanical loading facilities, each port has a second quay which could be used for general cargo. At Cam Pha,

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the second quay possibly is used in connection with transloading goods into small coastal ships and barges, and no warehouses are associated with the quay. The small general cargo area at Hon Gay has one wharf about 80 feet long and 10 warehouses. These two ports are served by a narrow gauge railroad which connects the ports with the coal mines but not with the main rail system.

The amount of general cargo that moves through Cam Fns and Hon Cay could be increased. If the goods were not moved to and from the port by coastal water transport, they would have to be moved by truck. Highway route 2 that passes through these two ports and continues on to Haiphong is mostly gravel-surfaced with portions bituminous treated. There are a number of ferry crossings on the route, some with limited capacity of two or three jeep-type vehicles per ferry. Other bottlenecks on the route include narrow bridges; some fords, sharp curves, and a causeway with two or three short bridges 5 miles north of Haiphong. Trafficability of route 2 is limited also in the rainy season by the low-lying terrain which is subject to inudation.

Two other minor ports in Horth Vietnam that could also be used to some extent as possible alternates to Haiphong are No Son and Hen Thuy.

Do Son, located 10 miles southeast of Haiphong on a point of land extending into the Gulf of Tonkin, has a petroleum pier and storage for about 3,000 tons of petroleum at an airfield that is not presently in use. Extensive exposed anchorage is available in the open rodisted for general cargo ships, but berthing facilities and whereas are limited.

Ben Timy, the port for the tows and the military staging area at Vinh, has a fairway depth over the bar that limits the port to vessels of about 5,000

GRT and under. A general cargo wharf, located about 200 feet from the shore, has about 450 feet of berthage at the wharf and 4 warehouses and 1 large storage building. The petroleum wharf is located about 2 nautical miles downstread and has 11 oil tanks for storage. In March 1963 it was reported that port facilities at Ben Thuy apparently had not been expanded in recent years except for the naval facilities.

Expansion of port facilities has been observed at two other minor ports, Dong Hoi and Quang Khe, located to the south of Ben Thuy, but the piers under construction at these ports are either naval facilities or T-head piers suited for vessels of not over 125 feet in length. Vessels requiring a depth of more than 12 feet cannot use these ports because the high water over the bar at the harbor entrances has a maximum depth of 12 feet.

B. Railroads

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considerable amount of the imports and exports of North Vietnam could be handled through South China ports, primarily Fort Bayard. The goods could then be transported by rail to Hanoi, a total distance of about 840 kilometers from Fort Bayard. The railroad between these cities consists of a single-track standard-gauge line from Fort Bayard to F'ing-hsiang, China, and a single-track meter-gauge line from P'ing-hsiang to Hanoi. The meter-gauge line, which is the limiting section of the route, has an estimated capacity of 2,500 to 2,700 tons each way per day (EWFD). The line is reported to be well constructed and maintained. Actual freight traffic over it at present probably averages about 1,000 tons EWFD, leaving an unused capacity of 1,500 to 1,700 tons EWFD.

Water-borne exports from Haiphong are estimated to be 2,700 tons per day, and water-borne imports are estimated to be 1,400 tons per day. In the event of a total blackade of Haiphong, all of the water-borne imports that normally move through the port and as much as 1,500 to 1,700 tons of the exports could be shifted to rail transport. The meter-gauge line to P'ing-haiang could not haul the remaining 1,000 to 1,200 tons of the exports.

The additional cost to North Vietnam to use the rail line for the 1,400 tons of imports per day that normally move through Haiphong would be about \$16,000 per day, or about \$6 million per year. This cost amounts to about \$12 per ton for the distance between Fort Bayard and Hanoi, including a transloading charge at P'ing-haiang. This cost may not be excessive for the majority of the imports, which are essential to North Vietnamese industry. The cost per ton might be prohibitive, however, for some North Vietnamese exports, especially for apatite, a low-value, bulky commodity that is the major export item in volume. The Chinese railroads could lower the freight cost for some of the cement, which China normally imports, and possibly for other commodities in order to fill the Chinese railroad cars delivering North Vietnamese imports to P'ing-haiang, thus avoiding an empty haul back to Fort Bayard. Because of the high cost of transportation and a possible shortage in North Vietnam of suitable covered freight cars to haul apatite, this commodity would probably not be exported.

Possible congestion at P'ing-hsiang, the transloading point on the border between the standard-gauge rail system of China and the meter-gauge system of North Vietnam, might initially limit the actual tonnage transported to a figure somewhat below the theoretical capacity of the line, although no significant delays or limitations on traffic are known to have occurred in the

past from the transloading operation. If continued congestion occurred at the transloading point, it could be eliminated by the expansion of the transloading facilities, a task that could be accomplished rather easily and probably within one month.

The narrow-gauge rolling stock park probably would not be a limiting factor in the attainment of the theoretical capacity of the P'ing-hsiang-Hanoi line. Although freight cars and locomotives are not plentiful in North Vietnam, Chinese narrow-gauge rolling stock from the Kunming Railroad Bureau could be used to supplement a deficiency in the North Vietnamese rolling stock park. Furthermore, rolling stock previously used to move seaborne traffic between Hanoi and Haiphong could also be used. Repair facilities are believed to be adequate to service the increase in the active park. The North Vietnamese probably do not have enough narrow-gauge tank cars for carrying petroleum. Some petroleum products could be moved in drums by rail, but this would require considerably more time than movement by tank cars. The inability to divert all petroleum shipments to the rail system could be the most serious problem for North Vietnam in the event Haiphong channel is blocked.

C. Motor Vehicles and Air Transport

The extent to which motor vehicle transport can be used to supplement rail transport in case of a blockade of Haiphong depends on how much aid Communist China makes available to North Vietnam in the form of trucks, gasoline, and spare parts. At present these items must be imported and are scarce in North Vietnam. The combined military and civilian truck park is

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estimated to include 5,000 trucks ranging in size from 1/4-ton to 3-tons.

Little information is available regarding the problems of repair, spare parts, and fuel availability for these trucks. Due to the high cost of motor vehicle transport, about 3 times that of rail transport, and to the problems of obtaining suitable trucks, it seems likely that only essential imports and possibly those exports from North Vietnam that originate near the Chinese border would be transported by truck.

Three road systems connect Kwangsi Region and Kwangtung Province of China with Hanoi and Haiphong. Route 2 along the cost, discussed above, has a low capacity due to a limiting sector near the Chinese border which probably has only a narrow, improved-earth arrace, Houte 1, which runs roughly parallel to the Hanoi-Dong Dang railroad line has a gravel or crushed atone surface, with surface widths ranging from 10 feet to 19 feet. Route 3 is located further inland, extending north from Hanoi to Cao Hang near the Chinese border. To connect with a Chinese rail line the road extends to Ri-ch'in on the Kuei-yang-Jani-chou line or to Ning Ming on the Ian-chou - P'ing-hainng line. This road has the lower capacity of the three routes and would not be used to move goods unless absolutely necessary because of the distance involved and because of one 4: mile section in North Vietnam between Cao Bang and the border that is described as improved-earth road with some light gravel sections, about 9 to 15 feet wide, passing through rugged mountainous terrain.

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Small amounts of high-priority 1 tems could be flown from Chinese airfields to North Vietnam. Shortages of spare parts and fuel for aircraft in North Vietnam and China, however, would limit the use of air transport unless an airlift were supported by the USSR.

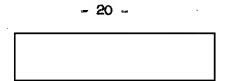
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V. Economic Effects of Denying Imports to North Vietnam

If denied use of the port of Haiphong, the North Vietnamese could shift almost all of the commodities previously imported by sea (with the possible exception of petroleum) to South China ports, in particular to Fort Bayard, from where they could be transported by rail to Hanoi. If at the same time, this rail transportation were interrupted (e.g., by the sabotage of the Dap Cau railroad/ highway bridge and sabotage of other transportation targets of the route to the north), the country then would be deprived of most of its imports. Such a denial of imports would, after the first two months, increasingly disrupt the industrialization program and cause a drastic fall in industrial output.*

The immediate effect of such a denial of imports would be in capital construction where work currently under way would soon have to be curtailed or come to a halt largely because of the lack of steel, machinery, and equipment. Work on the rail line and bridges south of Vinh could not be completed without imported structural steel, reinforcing rods, and rails.

^{*} Because North Vietnam's economy is basically one of subsistence agriculture with only a small modern industrial sector which accounted for about 12 percent of GNP in 1962, the denial of imports would not have as great an impact upon the total populace as it would upon a country which is not able to feed its own population. The conclusions as to the impact on the economy of a denial of imports exclude the possibility that Communist China or the USSR might commit themselves to supplying some of the most essential imports to North Vietnam by air.



Cutting off imports of metallurgical equipment such as components for steel-producing furnaces and rolling facilities would prevent the Thai Nguyen Iron and Steel Mill from coming into full operation. Lack of coking coal for the steel mill's blast furnaces, however, could be offset temporarily by more intensive mining of small domestic resources of coking coal. The denial of equipment to complete high-pressure units for ammonia synthesis, large quantities of corrosive-resistant piping, and control and measuring instruments would postpone the completion of the large nitrogenous chemical fertilizer plant at Phu Lang Thuong. In addition, the cutting off of imports of generators, steam turbines, boilers, transformers, and transmission equipment would prevent the planned expansion of the Thai Nguyen and Uong Ri Electric Power Plants, which together account for about one-third of the electric power capacity of the main grid in North Vietnam which supplies Hanoi, Haiphong, Viet Tri, and Thai Nguyen.

Manufacturing industries now in operation, which accounted for about 80 percent of the gross value of modern industry in 1962, would be seriously affected by denial of imports. Most manufacturing industries probably would be able to continue production for about two months on the basis of current stockpiles of materials. With the depletion of these stockpiles, such industries as machine-building and textiles would be forced to curtail output drastically unless imports of steel and raw cotton were resumed. Denial of some industrial

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chemicals, particularly caustic moda, would adversely affect the production in the chemical, pulp and paper, soap, and textile industries.

The effect of a danial of im orts of petroleum products to North Vietnam would become an increasing problem after the first two months. It is estimated that the North Vietnam see may have as much as four to six months of reserves of petroleum. If the FOL storage facility at Haiphong were destroyed in denying the North V etnamese use of the port, the economy would lose at least one-third of its storage capacity and possibly as much is one-half of its reserves. With the depletion of petroleum reserves, the industrial and motor transportation sectors of the economy would come to a half. Failure to obtain spare parts for muchinary and equipment in industry and for the various modes of transportation tould also be an increasingly strious problem after two months. The increased use of trucks and small motorized craft by the regime in an attempt to offset the import blockade probulty would use up rapidly the present inventory of parts, and thereafter the regime would be forced to cannibalize other vehicles.

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VI. Political Effects Among Free World Countries of Interdiction of Haiphorg Farbor (This Section was written by ONE)

Interdiction would be universally ascribed to US support and direction, whether or not US involvement were overt. Reactions would vary with the particular audience and the particular interdiction tactics. Whatever those tactics interdiction would probably be velocized by the governments of the Republic of China and the ROK. There would be similar reactions on the part of South Vietnam and Thailand, touched with some official and public concern over possible retaliatory actions by the Communists. Whatever the interdiction tactics, reactions would probably be ambivalent in Isos, Malaysia, the Philippines, Australia, and New Zealand: satisfaction, on the one hand, that the US was taking a tough stand; concern, at the same time, over possible adverse consequences.

adverse for the most part. It general, such reactions would probably be relatively low-keyed in the event of channel blocking, sharper in the event port facilities were damaged, and sharper still in the event of mining or blockade. In these latter two cases:

- a. The US-sponsored actions would be considered aggressive and dangerous, tangential to the central problem of South Vietnam, and in violation of international law.
- h. Most of these states would support initiatives for a conference or international discussion of the new situation, and many would probably support Communist efforts to condemn US actions.

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APPENDIX -

Statistical Tables

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Table 1

North Vietnam: Direction of Trade, 1962-63 a/

In million US \$ 1962 1963 Exports Imports Exports Imports Total 67.0 Communist Countries b/ 66.2 130.9 135.7 54.6 USSR c/ 30.2 n.a. nea. European Satellites c/ 21.0 25.0 n.a. n.a. Communist China and other 14.9 Communist Countries b/ 51.3 n.a. n.a. Free World c/ 21.8 12.1 25.0 d/ 14.0 d/ 13.0 Japan 3.4 $9.9 \, a/$ 4.3 d/ France 2.2 2.9 3.6 2.5

a. The North Vietnamese data on total imports are believed to include all goods imported into the country except military deliveries on a grant basis. Soviet and European Satellite trade data, which are used in this table to indicate North Vietnam's imports from these countries, are believed to exclude all goods shipped to North Vietnam on a grant basis.

b. Derived as a residual.

c. Derived from trade statistics published by the trading partner.

d. Estimate based on preliminary data.

Table 2

North Vietnam: Commodity Trade with Free World

In thousand US dollars and percent of total Percent Value 100.0 Exports 2,211 10.1 Food and beverages (4,2) (907) Cereal and cereal preparations (4.1)) ((906)) 15,754 72.1 Coal 1,826 Cement 1.092 Crude materials (162)Oilseeds 116 Crude fertilizers and minerals (696) Crude animal and vegetables materials 961 Other goods 12,052 100.0 Imports 6,141 51.0 Manufactured goods (856) (7.1)Base metals and manufactures (4.2)) Iron, steel, and semimanufactures ((511)) Textile yarn, fabrics, and manufactures (32.1)(3,866) except clothing 2,201 18.3 Chemicals (7.6)Nitrogen fertilizer other than natural (918) 6.2 742° Machinery and equipment 312) Nonelectric machinery Electric machinery and appliances 226 Transport equipment Food and beverages (171) Corn Textile fibers Crude rubber Other goods

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Table 3
Commodity Trade with the U

In million US dollars and percent of total

North Vietnam: Commodity Trade with the USSR 1962

	Value	Percent
Exports	30.2	100.0
Parquet frieze Food and beverages Manufactured consumer goods Clothing except footwear Oilseed produce and other unprocessed	4.6 1.2 18.6 (13.5)	15.2 4.0 61.6 (44.7)
food products Other goods	0.1 5.7	0.3 18.9
Imports	<u>54.6</u>	100.0
Machinery and equipment Complete plants Motor vehicles, transportation, and	31.4 (21.7)	57·5 (39·7)
garage equipment Tractors and agricultural machinery Ships and marine equipment	(2.5) (1.0) (1.2)	(4.6) (1.8) (2.2)
Petroleum products Gasoline	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	7.7 (3.1)
Kerosene Diesel fuel Lubricating oils	(0.8) (0.8) (0.6)	(1.5) (1.5) (1.1)
Lubricants, non-liquid Metals and metal products	(0.2) 7.8	(0.4) 14.3
Ferrous metals and products Rolled ferrous metal Nonferrous metals and products	(6.3) ((4.4)) (1.5)	(11.5) ((8.1)) (2.7)
Ammonium sulphate Manufactured consumer goods Other goods	1.6 2.9 6.7	2.9 5.3 12.3

Table 4
Ship Calls at Haiphong by Flag, 1963

flag	No. of Call	ls GRT
Free World:		
Denmark	10	38,769
Greece	16	
Italy	2	115,327 14,334
Japan	23	82,433
Lebanon	16	114,783
Liberia	2	14,137
Netherlands	23	46,498
Norway	20	69,794
Panama		37,843
Sweden	ုံ	18,667
Switzerland	7 3 1	6,160
United Kingdom	82	356,838
West Germany	4	18,480
Subtotal	209	934,059
SSR	57	416,524
uropean Satellites:		a .
Poland	. 39	272,046
Czechoslovakia	10	66,684
Albania	1	8,649
Subtotal		
PUPOCET	50	347,379
ommunist China	48	138,002
Total	364	1,835,964

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Table 5

rable

Communist Chartered Free World Vessels Calling at Haiphong, 1963

		1	ree Wor	ld Vessel	s Under Co	mmist C	umber o	f Calls	
		Chartering Country							
Flag	All Free World Vessels	North Vietnam	North Korea	Rumania	Hungary	Communia	t USSR	Total	
Denmark	10								
Freece	16			-		5		5	
Italy	2	-		7				8	
Japan	23		•	2				2	
ebanon	16	.,	5	-	•			1	
liberia	2		•	6	2	2		13	
letherlands	ร ิ	21		1				ı	
lorway	ဆို	<u> </u>				_	_	21	
anama	7	2		_		Ĵ	1	14	
Sweden	4	-		3				5	
witzerland	์ 1								
hited Kingdom	82	43	1			**			
est Germany	4	73	.1.			15		59	
Total Non-Commist	209	72	4	19	2	31	3	120	

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Table 6

The Use of Cargo-carrying Capacity of Merchant Vessels
That Called in Haiphong in 1963

	Inbound \	essels		Metric	Tons
			Flag		
Reported Cargoes	Free Worl	d Soviet	Satellit	e Chinese	Total
Maize and other Grains Ammonium Sulfate and other Fertilizers	94,000	***			15,000
Timber	80,000	40,000		5 000 =	
POL	23,000			5,000 1	25,000
Miscellaneous	35,000	117,000			23,000
Total dentified Arrivals without Cargo (in ballast)		63,000			52,000
	232,000	220,000	40 (**	26,000 I	63,000 78,000
Total Cargo-carrying Capacity Accounted for		***	100,000		78,000
Total Cargo-carrying Cargoita	852,000	220,000	100,000	84,000 125	6,000
Not Accounted for Estimated Total Cargo-carrying	460,000	360,000	390,000	106,000 1,31	
Capacity Available	1,310,000	580,000	490,000	190,000 257	
Reported Cargoes	Outbound V	essels			•
Apatite Cement	242,000	77,000	11,000		
Miscellaneous	41,000	9,000	8,000	330	0,000
Total	••	102,000	-	7,000 6	,000
Total Cargo-carrying Capacity Not Accounted for Sstimated Total Cargo-capacity	283,000	188,000	19,000	7,000 497	,000
	1,027,000	392,000	471,000	183,000 2073	
Capacity Available	1,310,000	580,000	1	190,000 2570	

Table 7

Monthly Pattern of Ship Calls at Haiphong, 1963

	Free World		S	Soviet European Satellite			Commun	Communist Chinese		Total Calls	
Month	No. of Calls	GRT	No. of		No. of Calls	GRT g		GRE	No. of		
January	15	63,218	6	47,730	5	32,449	2	4,810	28	148,207	
Pebruary	12	48,702	6	26,525	1	7,218	j.	10,987	23	93,432	
March	14	65,281	8	62,584	5	36,019	3	9,092	30	172,976	
April	11	45,088	6	49,093	3	18,324	2	5,000	22	117,505	
May	23	110,852	4	33,951	7	47,599	6	15,064	40	207,196	
June	22	105,882	4	40,443	3	21,544	5	10,125	34	177,994	
July	20	89,972	4 ,	32,718	3	20,139	5	12,125	32	154,954	
lugust	22	108,495	3	27,679	3	18,960	2	5,907	30	161,041	
September	17	75,916	2	15,759	5	38,885	4	12,202	28	142,762	
October	16	73,110	4	18,070	5	34,041	3	9,827	28	135,048	
lovember	17	62,038	7	49,381	5	38,508	7	27,135	36	177,062	
December	20	85,505	3	12,591	5	33,693	5	15,728	33	147,787	
Total	209	934,059	57	416,524	50	347,379	48	138,002	364	1,835,964	